CLINICAL NOTES AND CASE REPORTS

ZINC IONIZATION IN THE TREATMENT OF NASAL SINUSITIS

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INFLAMMATORY states in the nasal mucosa and sinuses are the results of vicious cycles; first, there is an interference with the normal action of the cilia and mucinous covering of the nasal mucosa; there then ensues the typical inflammatory reaction in the mucous membrane, according to duration—acute if early, chronic if long continued. In the latter state there is a hyperplasia of the mucous membrane about the ostia of the various sinuses impeding drainage and aeration with an eventual sinus involvement, if none were previously present, or with a continued sinus involvement if the reverse were true.

In the effort to shrink the nasal mucosa and to promote aeration and drainage in the sinuses, a host of drugs and medicaments have been used with more or less beneficial results. Objections, however, were found either on a physiologic or pathologic basis to camphor, menthol, eucalyptol,[1,2] epinephrin hydrochlorid,[3,4] hypertonic solutions,[5] oily solution,[6] and cocain,[7] while none or little could be found against ephedrin hydrochlorid,[4] isotonic solutions,[5] and aqueous solutions.[6] Organic silver salts have some shrinkage effect, but not to the same extent and permanence as with zinc ionization.[8]

In a small series of forty cases in which there were positive roentgen findings for the anterior series of sinuses, I found antral irrigations, ephedrin sprays and hot argyrol tampons of little avail to relieve the persistent symptoms of impaired breathing due to turbinal engorgement and persistent postnasal discharge. There were no apparent indications for any intranasal surgery; the septa were fairly straight and regular without impingement against the lateral nasal wall, and the antral washings did not point toward any bone involvement. Ephedrin improved the breathing only temporarily and the argyrol packs placed under the middle turbinate reduced the discharge to some extent; but symptoms of a low-grade inflammation would flare up, if treatment were discontinued for even one month.

It seemed, therefore, that the vital point to attack would be the inflamed mucosa around the ostia within the middle meatus—the so-called "drainage area" for the anterior series of sinuses—and that zinc ionization might prove to be the logical astringent agent. Before instituting this method, however, cotton strips saturated with one per cent zinc sulphate solution were placed, as a control, under the middle turbinate of each patient for fifteen minutes for from three to six times, to ascertain if any benefit would be derived therefrom; but not the slightest amelioration of symptoms ensued.

TECHNIQUE OF METHOD

The technique of treatment in these cases consisted, first, of thorough shrinkage of the middle turbinate on the side involved; the ephedrin pack (3 per cent solution) being placed above the inferior turbinate and beneath the middle turbinate, thus filling the middle meatus as tightly as possible. This pack is allowed to remain in place for fully fifteen minutes. If the middle turbinate were close to the lateral nasal wall, it would be gently infracted medially toward the septum, to allow easier access to the hiatus semilunaris. A strip of cotton saturated with one per cent zinc sulphate solution placed on a zinc wire (attached to the positive pole of a galvanic battery—five milliamperes) would then be inserted tightly within the middle meatus, and as closely as possible to the lateral nasal wall, and allowed to remain in place for twenty minutes. At first there would be a sensation of burning in the nose, and some would complain of a metallic taste in the mouth; but this would soon wear off. After the insertion of this positive electrode, the patient would lie on his side with the same side of the head dependent as the side of the nose under treatment. A few drops of the zinc sulphate solution would be dropped from time to time onto the cotton pledget with a long thin pipette and the residue allowed to trickle down the nose. Care should be taken in both starting the current slowly and stopping it just as gradually, in order to avoid any unpleasant reaction. The indifferent or negative electrode should be saturated with normal saline and held in the palm of the hand.

COMMENT

This method was used in a series of forty patients whose symptoms were persistent postnasal discharge and impairment of breathing; and the positive findings in whom consisted of mucous membrane thickening in one or more of the anterior group of sinuses, as shown by roentgen ray and mucus shreds in the antral washings. Allergy was ruled out by the history, and by the appearance of the turbinal mucosa.

Of these forty patients, twenty-eight complained of postnasal discharge alone, while twelve complained of both postnasal discharge and impaired breathing. Of the twenty-eight, a total of twenty-one were symptom-free after twelve treatments and seven were not relieved after eighteen treatments. Of the twelve remaining patients, seven were symptom-free after twelve treatments, while five were not relieved after eighteen treatments.

After a follow-up of twelve months, those who were relieved were still symptom-free, but those who showed no results after this form of treatment, did improve either after a window resection or amputation of the anterior tip of the middle turbinate, or both. This can probably be explained by the fact that access to the ostia via the hiatus semilunaris was more difficult in these cases, due to anatomical peculiarities, and, therefore, aeration would be possible only by the surgical procedures mentioned.

Although this method is not a cure-all, it should be seriously considered as a valuable adjunct to the

therapeutic armamentarium in nonsurgical intranasal therapy, where no results have been otherwise achieved with time-honored medicaments.

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REFERENCES

1. Fox, Noah: Archiv. Otolaryng., Vol. 6, No. 2, p. 112 (Aug.), 1927.

2. Fox, Noah: Archiv. Otolaryng., Vol. 11, No. 1, p. 48 (Jan.), 1930.

3. Fox, Noah: Archiv. Otolaryng., Vol. 13, No. 1, p. 73 (Jan.), 1931.

4. Fox, Noah: Archiv. Otolaryng., Vol. 13, No. 2, p. 255 (Feb.), 1931.

5. Stark, W. B.: Archiv. Otolaryng., Vol. 8, No. 1, p. 47 (July), 1928.

6. Scheffel, Carl: Laryngoscope (April), 1931.

7. Phillips, F. L.: Ann. Otol., Rhin., and Laryng., 35:709 (Sept), 1926.

8. Harris, M. L.: Archiv. Otolaryng., Vol. 10, No. 1, p. 75 (July), 1929.

TETANUS?

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REPORT OF CASE

MR. F. O., grocery clerk, single, age 35, weight 178 pounds, height 6 feet. Health up to the date of injury, good. On April 29, 8 a. m., Mr. O. stepped on a nail in his garage. The nail penetrated the foot beneath the metatarsophalangeal joint of the left great toe, evidently entering the metatarsal bone. The board, through which the nail had been driven, was "pried" from the foot, and the extremity immediately "soaked in zonite for one-half hour." The patient then drove seventy-five miles to a neighboring town, to find his plans for the day interrupted by severe pain in the foot and leg. At 12:30 p. m., a physician was consulted, who probed the wound and gave 1500 units of tetanus antitoxin in the right deltoid muscle. Mr. O. returned home at 6 p. m. and again soaked his foot in zonite. The pain, which had extended into the thigh, increased gradually in severity, necessitating further medical attention. The patient was seen in his home at 12:30 a. m., April 30, at which time he was lying on a couch moaning and groaning, with a temperature of 99 degrees, pulse 100. There was slight redness about the wound, some swelling of the toe and adjacent parts, and excruciating pain and marked tenderness in the toe and foot. Muscle-twitching was easily elicited by gently tapping the foot, leg and thigh muscles. Any movement of the foot or leg was accompanied by much pain. Vague dorsal pains were complained of, especially of the left side, as high as the sixth thoracic vertebra. There was no indication of muscle spasm other than when the limb was moved or tapped, and this seemed more like rigidity due to pain. The patient was already mumbling and speech was becoming incoherent. Questions were answered very briefly, often incompletely, and sometimes only after two or three repetitions. Morphin sulphate, grain one-quarter, was given at once subcutaneously and 10,000 units of tetanus antitoxin were given intraspinally, and another 10,000 units intravenously. The patient was ordered to the hospital, which he entered at 1:20 a. m. in care of a special nurse. The puncture tract was laid open by a one-inch incision, the wound packed with gauze, and the dressings kept soaked with hydrogen peroxid. A maximum temperature of 100.2, pulse 92, was recorded at 5 p. m. At 6 p. m., 10,000 units of tetanus antitoxin were given intravenously and another 10,000 units intramuscularly. Very little change was noted up to this time. The moaning and groaning and restlessness continued until midnight of May 1. The patient states that he has only a fragmentary recollection of events which occurred between 11:30 p. m. April 29 and 6 p. m. April 30. Morphin was used to control the intense pain, and this may have necessitated catheterization for thirty-six hours. By the afternoon of May 1 the pain was restricted to the region below the knee, and the clouded mental condition had disappeared. Tapping the muscles no longer elicited any reaction. There was never more than a slight serosanguineous discharge on the dressings, and cultures in solid media, made of smears from the wound, remained sterile. The wound promptly began healing as soon as the gauze was removed. The patient left the hospital May 2, and the case was dismissed on the 19th. There have been no ill after-effects.

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PROLAPSE OF THE CERVIX AT TERM*

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THIS case is reported because of the rarity and the apparent lack of references to the condition in current literature. In many of the standard obstetrical textbooks the subject is either omitted entirely or dismissed with the reminder that the condition is quite rare. The late J. W. Williams had never had such a case and felt that prolapse of the cervix at term is a mechanical impossibility.

The following is a résumé of the history and course of labor in a patient having a prolapse of the cervix.

REPORT OF CASE

Mrs. De la R., a Mexican woman, aged twenty-three years, presented herself for prenatal care at the outpatient clinic of the General Hospital of Fresno County on July 13, 1933. Her last menstrual period was November 25, and confinement was expected on September 1. One previous pregnancy had been entirely normal. There had been no miscarriages.

Pelvic measurements: I. S., 25; I. C., 28; I. T., 29; Baud, 18.

Internal measurements were not taken. General physical examination revealed no abnormalities. Blood pressure was 112/72. Urine and Wassermann tests were negative. The patient was again seen on July 21, at which time she complained of slight vaginal bleeding of three days' duration. Hospitalization was refused by patient, and she was sent home with advice to remain in bed. Patient was again seen on July 27. Examination at this visit showed the cervix projecting about three and one-half centimeters beyond the vulval outlet. There were no signs of erosion or cervical infection. Following the patient's admission to the hospital, the cervix was replaced in the vaginal cavity under sterile technique. The patient left the hospital on July 23, against the advice of the attending physician. She again presented herself on July 27, and examination revealed the same degree of cervical prolapse as on the former admission. She was again admitted to the hospital and the cervix was again replaced. Examination at this time showed a cervix of normal appearance as to size and consistency. The os easily admitted one finger, and on palpation the presenting head could be easily felt. The lower uterine segment appeared thick, and it was felt that the previous vaginal bleeding might have resulted from the abnormal stretching of the upper uterine segment, causing a slight separation of the placental site. After replacement of the cervix the patient was placed on strict bed rest. On August 7, under aseptic precautions, the vagina was packed with mercurochrome-soaked gauze, and the patient was allowed to be up and about. The packing was expelled the following day and the patient was once again placed in bed. No

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